REMARKS

Claims 1-25 were pending. All stand rejected. The applicant requests further consideration and re-examination in view of the amendments above and remarks set forth below.

The office action mailed on March 16, 2005, is the third non-final office action issued in this application. In response to each of the prior two actions, the applicant explained how the applicant's claims are patentability distinguishable from the cited references. Each time, the grounds for rejection have been abandoned and new grounds for rejection adopted. As explained in detail below, the claims are patentable over the references being relied upon in the most-recent office action. In view of three office actions having been issued and overcome, the applicant submits that the claims have been thoroughly examined and are now due for allowance.

By the above amendments, the applicant has amended claim 1 and certain dependent claims to replace "a media" with "a medium" to clarify that the singular form is intended. This also serves to clarify the applicant's previous statement to the effect that the first and second routines are loaded from the same storage medium that stores the data to be accessed.

Rejections under 35 U.S.C. § 103:

Claims 1-4, 6-7, 10-15 and 18-25 are rejected as being unpatentable over U.S. Patent No. 6,772,155 issued to Stegelmann (hereinafter "Stegelmann") in view of U.S. Patent No. 6,816,891 issued to Vahalia, et al. (hereinafter "Vahalia").

The applicant respectfully traverses the rejection. As recited in claim 1, the present invention is directed toward a method of retrieving data from a data storage medium. A program is loaded from the data storage medium into a computer system, the program including at least a first routine for responding to a first request type for access to the data storage medium and a second routine for responding to a second request type for access to the data storage medium. A request is received for access to data stored on the data storage medium. A determination is made as to whether the request is of the first type or the second type. The first routine for accessing the data is called when the request is of the first type and the second routine for accessing the data is called when the request is of the second type. The requested data is presented.

Therefore, the storage medium in accordance with the present invention stores both the data to be accessed and the first and second routines for servicing requests

for access. The data can be retrieved using multiple different request types and interpreted in accordance with multiple different data formats. The invention overcomes disadvantages of prior storage techniques since the data can be completely or partially reconstructed, as needed. Further, the invention isolates the data storage format from the application used to generate the data so as to minimize problems caused by outdated data storage formats. Applicant's specification, page 2, lines 17-23.

Stegelmann is directed toward providing low level locking granularity in a database system. Stegelmann at col. 1, lines 63-65. A database is a collection of stored data that is logically related and is accessible by one or more users. Stegelmann, at col. 1, lines 5-6. A relational database management system includes relational tables made up of rows in which each row represents an entity defined by the table. Stegelmann at col. 1, lines 7-11. Locking prevents multiple users which attempt concurrent access to data from violating integrity of the data. Stegelmann, at col. 1, lines 22-30. A pseudo_read lock, a pseudo_write lock and a row-level (write or read) lock are implemented as part of an overall lock mechanism in the database system. Stegelmann, at col. 3, lines 58-61. Pseudo_read and pseudo_write locks are table-level locks until an actual conflict between two operations is detected. Stegelmann, at col. 3, lines 65-67. If a conflict is detected, then a row-level read or write lock is established to resolve the conflict. Stegelmann, at col. 4, lines 4-6.

Stegelmann defines a "transaction" as an "overall operation that is to be performed on one or more rows of a table." Stegelmann, at col. 4, lines 47-49. Each "transaction" includes one or more "requests." Stegelmann, at col. 4, lines 49-50. For example, in one transaction, a first request adds a first row, a second request updates the first row, another request deletes a second row, and so forth. Stegelmann, at col. 4, lines 50-52. The pseudo_write and pseudo_read lock mechanisms are enabled by maintaining multiple images of a row in a table that is being modified by a request or transaction. Stegelmann, at col. 4, lines 44-47. Stegelmann also explains that instructions of various software routines may be stored in one or more storage units and loaded for execution on corresponding control units. Stegelmann, at col. 26, lines 24-27.

Vahalia discloses a network file server including an array of "data movers," a display and keyboard, a cached disk storage subsystem and, optionally, a tape silo. Vahalia, at col. 5, lines 25-30. Each of the data movers is a high-end commodity

computer which includes a processor and a high-performance connection to the cached disk storage subsystem. Vahalia, at col. 5, line 65 to col. 6, line 17. Each of the data movers also includes one or more network attachments to a network which connects the data movers to clients. Vahalia, at col. 6, lines 19-26.

The cached disk subsystem of Vahalia includes cache memory and microprocessors that mate with a backplane subsystem and that act as channel or disk directors. Vahalia, at col. 7, lines 51-58. Each channel director is interfaced to a data mover while each disk director is interfaced to a string of disk drives. Vahalia, at col. 7, lines 58-63. If data to be read by a channel director is not in the cache, it is staged from the disk array to the cache. Vahalia, at col. 7, line 63 to col. 8, line 2.

To archive file data from a network to a tape, one of the data movers receives the file from the network and pre-stages the file to the cached disk storage subsystem at a rate of about 150 GB/hour. Vahalia, at col. 7, lines 23-27. Then one of the data movers de-stages the file from the cached disk storage subsystem to an associated read/write stations at a tape device speed of about 7 GB/hour. Vahalia, at col. 7, lines 28-31. Pre-staging to disk can be done immediately while de-staging can be done as a background operation or at night. Vahalia, at col. 7, lines 31-35.

The network file server of Vahalia is said to use multiple data processors to permit a large number of clients to simultaneously access a large number of files, overcoming the network attachment being a bottleneck to data access. Vahalia, at col. 1, lines 31-35 and col. 33, lines 7-33.

Regarding claim 1, the examiner stated that Stegelmann does not teach the claimed steps of loading a program from the data storage media into a computer system; receiving a request for access to data stored on the data storage media; calling the first routine for accessing the data when the request is of the first type and calling the second routine for accessing the data when the request is of the second type; and presenting the requested data.

However, the examiner stated that Vahalia

> "teaches a set of data processors for receiving requests from clients and a second set of data process[ors] for accessing file system and various of program modules stored in the cached disk system to be loaded for accessing the request as well as calling the module or routine or operation for accessing the request (see fig. 9, col. 17, lines 5-18, col. 7, lines 20-67 and col. 8, lines 1-26) and presenting the information in the display device. (col. 5, lines 30-32)."

The examiner thereby appears to take the position that Vahalia teaches features of claim 1 missing from Stegelmann. The applicant strongly disagrees. The applicant has studied Vahalia, including the numerous portions identified by the examiner, is unable to locate where it teaches the features alleged to be taught.

For example, as explained above, claim 1 requires that the first and second routines are loaded from the same storage medium that stores the data to be accessed. This is clear because claim 1 recites "loading a program from the data storage medium," "receiving a request for access to data stored on the data storage medium," and "calling the first routine for accessing the data when the request is of the first type and calling the second routine for accessing the data when the request is of the second type."

Nowhere does Vahalia teach or suggest loading any routine for responding to a request for storage access from the same medium that stores the data to be accessed by the routine, as is required by claim 1. The applicant has studied Vahalia, including the numerous portions cited by the examiner, but is unable to locate such a teaching or suggestion. For example, Figure 9 of Vahalia, which is relied upon by the examiner, shows "program modules and data structures" in the cached disk subsystem. At col. 17, lines 5-18, Vahalia teaches that a data mover can have "exclusive ownership of files." As explained above, the disk storage subsystems of Vahalia each include cache memory, controllers (referred to by Vahalia as "directors") and disks. Therefore, each disk storage subsystem includes several different storage media. Vahalia does not teach that the first and second routines are loaded from the same storage medium that stores the data to be accessed. Similarly, at col. 7, lines 20-67 and col. 8, lines 1-26, Vahalia teaches that files are archived by pre-staging to disk subsystems and then de-staging to tape. These passages of Vahalia also do not teach that first and second routines are loaded from the same storage medium that stores the data to be accessed.

Therefore, Vahalia does not teach or suggest this feature. The examiner appears to concede that Stegelmann does not teach or suggest this feature either. As explained by the Manual of Patent Examining Procedure in Section 2143.03 (8th Ed. Rev. 2), in order to properly reject a claim under 35 U.S.C. § 103, all claim limitations must be taught or suggested by the prior art. Therefore, claim 1 is allowable over Stegelmann and Vahalia because they do not teach or suggest this feature, taken

singly or in combination. Claims 2-4, 6-7 and 10-14 are allowable at least because they are dependent from an allowable claim 1.

Further, as was explained by the applicant in response to the two prior office actions, the "first routine" and the "second routine" of claim 1 are alternatives such that, for a particular request, one of the routines is selected for accessing the data based on the type of the request. This is clear because claim 1 recites a step of "determining whether the request is of the first type or the second type." The examiner appears to take the position that Stegelmann discloses this feature since it teaches that a "transaction" may include one or more "requests." However, performing one or more requests for a transaction in the context of Stegelmann does not suggest or disclose making a determination of whether a request is of the first type or the second type and selecting the "first routine" and the "second routine" based on this determination, as is required by claim 1. The applicant respectfully submits that neither Stegelmann nor Vahalia, taken singly or in combination, suggests or discloses this feature. This is another reason why claim 1 is allowable over Stegelmann and Vahalia. This is also another reason why claims 2-4, 6-7 and 10-14 are allowable, being dependent from claim 1.

The Manual of Patent Examining Procedure at Section 2141.01 (8th Ed. Rev. 2) explains that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

The examiner stated that

> "[i]t would have been obvious to a person of ordinary skill on the art at the time the invention was made to combine the teachings of Stegelmann with the teachings of Vahalia, wherein the software modules being stored on the storage units are transported in the system provided therein (Stegelmann's col. 26, lines 50-60) would incorporate the use of loading the software program for accessing the request, in the same manner as described by Vahalia (col. 5, lines 30-32 and see fig. 9). The motivation being to minimize problems caused by the different types of storage devices having different data storage formats."

However, neither Stegelmann nor Vahalia is directed to providing a solution to "problems caused by different types of storage devices having different data storage

formats" as identified by the examiner. This is clear because Stegelmann is directed to providing low level locking granularity in a database system while Vahalia is directed to using multiple data processors to permit a large number of clients to simultaneously access a large number of files. Thus, the applicant submits that a person would not have been motivated to combine Stegelmann with Vahalia to solve such a problem. Rather, it appears that the examiner is resorting to the applicant's specification for this alleged motivation. It is the applicant's specification that explains that the applicant's invention isolates the data storage format from the application used to generate the data so as to minimize problems caused by outdated data storage formats. Applicant's specification, page 2, lines 17-23. As is explained in the Manual of Patent Examining Procedure at Section 2142 (8th Ed. Rev. 2), knowledge of applicant's disclosure must be put aside in reaching a determination of obviousness. Therefore, the examiner's alleged motivation is improper for rejecting the applicant's claims because it comes from the applicant's specification and not from the prior art. This is another reason why claim 1 and claims 2-4, 6-7 and 10-14, being dependent upon claim 1, are allowable.

Moreover, because Stegelmann and Vahalia are directed toward problems that are entirely different from "problems caused by different types of storage devices having different data storage formats" as identified by the examiner, a person motivated to solve such a problem would not be motivated to combine Stegelmann and Vahalia for this purpose. This is because there is no reason to believe that a combination of Stegelmann and Vahalia would succeed at solving such a problem. As is explained in the Manual of Patent Examining Procedure, at Section 2143.02 (8th Ed. Rev 2), there must be a reasonable expectation of success in order to properly combine references. This is yet another reason why claim 1 and claims 2-4, 6-7 and 10-14, being dependent upon claim 1, are allowable.

The examiner rejected independent claims 15, 22 and 25 for essentially the same reasons as claim 1. Claims 15 and 22 each recite an article of manufacture comprising a computer usable medium having data stored thereon and having computer readable program code stored thereon, the computer readable program code including a first routine for accessing the data and a second routine for accessing the data. Neither Stegelmann, nor Vahalia, suggests or discloses the first and second routines stored on the same storage medium that stores the data to be accessed. For at least this reason, claims 15 and 22 are allowable over Stegelmann and Vahalia, taken

singly or in combination. Claims 16-21 and 23-24 are allowable at least because they are dependent from an allowable base claim.

Claim 25 recites an article of manufacture comprising a computer usable medium having data stored thereon and having computer readable program code stored on secondary storage associated with the computer usable medium, the computer readable program code including a first routine for accessing the data in response to a request of a first request type and a second routine for accessing the data in response to a second request type, wherein the secondary storage is built into a cartridge for the data storage media.

The examiner stated that Stegelmann does not disclose the feature in which the secondary storage is built into a cartridge for the data storage media. However, the examiner appears to take the position that Vahalia does disclose such a feature because Vahalia discloses a tape cartridge. The examiner further stated that it would have been obvious to modify Stegelmann to include this feature. The applicant respectfully disagrees. Nowhere does Stegelmann or Vahalia suggest or disclose storing first and second routines or accessing data in a secondary storage built into a cartridge for the data storage media that stores the data to be accessed. The mere mention of a tape cartridge in Vahalia does not suggest or disclose this feature. Therefore, claim 25 is allowable over Stegelmann and Vahalia, taken singly or in combination.

In addition, claims 15, 22 and 25 recite a "first routine" and a "second routine" that are alternatives such that, for a particular request, one of the routines is selected for accessing the data based on the type of the request. As explained above, Stegelmann and Vahalia do not suggest or disclose such a feature, taken singly or in combination. This is another reason why claims 15, 22 and 25 are allowable over Stegelmann and Vahalia. This is also another reason why claim 16-21 and 23-24 are allowable, being dependent from an allowable base claim.

The examiner rejected claim 5 in view of Stegelmann, Vahalia and Pub. No. 2002/0152194. Claim 5 is dependent from claim 1. Claim 1 is allowable over the cited references for the reasons stated above. The applicant submits that Pub. No. 2002/0152194 does not suggest or disclose the features of claim 1 which are missing from Stegelmann and Vahalia. Therefore, for at least this reason, claim 5 is allowable.

The examiner rejected claims 8-9 and 16-17 in view of Stegelmann, Vahalia and U.S. Patent No. 5,276,867 to Kenley. Claims 8-9 are dependent from claim 1, while claims 16-17 are dependent from claim 15. Claims 1 and 15 are allowable over the cited references for the reasons stated above. The applicant submits that Kenley does not suggest or disclose the features of claim 1 and 15 which are missing from Stegelmann and Vahalia. Therefore, for at least this reason, claims 8-9 and 16-17 are allowable.

Conclusion:

In view of the above, the applicants submit that all of the pending claims are now allowable. Allowance at an early date would be greatly appreciated. Should any outstanding issues remain, the examiner is encouraged to contact the undersigned at (408) 293-9000 so that any such issues can be expeditiously resolved.

Respectfully Submitted,

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